

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of	:
	: Examiner: Not Yet Assigned
Soledad PENADES et al.	:
	: Group Art Unit: 1645
U.S. Appln. No. 10/559,957	:
	: Confirmation No: 1468
Filed: December 8, 2005	:
	: Atty Docket No.: 0380-P03930US0
For: MAGNETIC NANOPARTICLES	:

**SUPPLEMENTAL INFORMATION DISCLOSURE
STATEMENT UNDER 37 C.F.R. §1.97**

Commissioner for Patents
Alexandria, Virginia 22313-1450

Sir:

In compliance with the duty of disclosure set forth in 37 C.F.R. §1.56, Applicants hereby submit copies of the documents listed on the attached Form PTO/SB/08A. The listed documents were included in a search report issued in connection with a corresponding European patent application. The relevance of each listed document is described in the European Search Report, a copy of which is also included herewith.

This Information Disclosure Statement is being filed within three months of issuance of the European Search Report. Thus, it is believed by the undersigned attorney that no fee is required under 37 C.F.R. §1.97(b). In the event that any fee is required in connection with this submission and not enclosed, the Commissioner is authorized to charge such fee to the account of the undersigned attorneys, Account No. 04-1406. A duplicate copy of this paper is enclosed.

In re the Application of Soledad Penades et al.
Application No 10/559,957
Attorney Docket No. 0380-P03930US0
Page 2

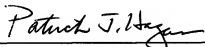
It is respectfully requested that the listed documents be considered by the Examiner and be made of record in the above-identified application. This submission is believed to be in compliance with the requirements of 37 C.F.R. §1.97 and §1.98.

Early and favorable consideration of this application is respectfully requested.

Respectfully submitted,

DANN, DORFMAN, HERRELL AND SKILLMAN

A Professional Corporation
Attorney for Applicant(s)

By 
Patrick J. Hagan
PTO Registration No. 27,643

Customer Number 000110
Tel.: 215-563-4100
Fax: 215-563-4044
e-mail: phagan@ddhs.com

Enclosures: Form PTO/SB/08A
Copies of listed references



P B 5816 - Patentaan 2
2280 HV Rijswijk (ZH)
☎ +31 70 340 2040
TX 31651 epo nl
FAX +31 70 340 3016

Europäisches
Patentamt

Zweigstelle
in Den Haag
Recherchen-
abteilung

European
Patent Office

Branch at
The Hague
Search
division

Office européen
des brevets

Département a
La Haye
Division de la
recherche

☐ Kiddle, Simon John
Mewburn Ellis LLP
York House,
23 Kingsway
London WC2B 6HP
GB

TSN

Datum/Date

09-07-2007

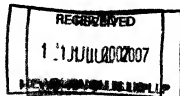
Zeichen/Ref. #1 SJK/RP6345839	Anmeldung Nr./Application No./Demande no./Patent Nr./Patent No./Brevet no. 04736221.5
Anmelder/Applicant/Demandeur/Patentinhaber/Propriétaire/Titulaire CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS, e	

COMMUNICATION

The European Patent Office herewith transmits

- ☐ the European search report
☐ the declaration under Rule 45 EPC
☐ the partial European search report under Rule 45 EPC
☒ the European search report under Rule 112 EPC

relating to the above-mentioned European patent application. Copies of the documents cited in the search report are enclosed.



The following specifications given by the applicant have been approved by the Search Division :

- ☐ Abstract ☐ Title ☐ Figure
- ☐ The abstract was modified by the Search Division and the definitive text is attached to this communication.
- ☐ The following figure will be published with the abstract, since the Search Division considers that it better characterises the invention than the one indicated by the applicant.
- Figure:
- ☐ Additional copy/copies of the documents cited in the European search report.

REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.



EPO Form 1507 02.93



CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 12, 13 complete 1-11, 14, 15, 20-36, 40-46, 49, 51-56,
58, 60-65 in part

Magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand incorporates a lanthanide. Excluding the subject matter of inventions 2-9

2. claims: 16, 17, 47, 48, 57, 59 complete; 1-11, 14, 15, 20-36,
40-46, 49-56, 58, 60-65 in part

Magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a carbohydrate group (polysaccharide, oligosaccharide, monosaccharide). Excluding the subject matter of inventions 1, 3-9.

3. claims: 18, 19 complete; 1-11, 14, 15, 20-36, 40-46, 49, 51-56,
58, 60-65 in part

Magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a glycanoconjugate (glycolipid or glycoprotein). Excluding the subject matter of inventions 1, 2, 4-9.

4. claims: 1-11, 14, 15, 20-37, 39 in part

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises an antigen for the preparation of a medicament for vaccinating. Excluding the subject matter of inventions 1-3, 5-9.

5. claims: 38 complete; 1-11, 14, 15, 20-37, 39 in part

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a nucleic acid encoding an antigen for the preparation of a medicament for vaccinating. Excluding the subject matter of inventions 1-4, 6-9.

6. claims: 1-11, 14, 15, 20-36, 40-46, 49, 50 in part



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a hormone or DHEA for the preparation of a medicament for treatment of cancer metastasis. Excluding the subject matter of inventions 1-5, 7-9.

7. claims: 1-11, 14, 15, 20-36, 40-46, 49, 50 in part

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a peptide capable of binding to a cell-specific receptor for the preparation of a medicament for treatment of cancer metastasis. Excluding the subject matter of inventions 1-6, 8, 9.

8. claims: 1-11, 14, 15, 20-36, 40-46, 49, 50 in part

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises a lipid for binding a toll receptor for the preparation of a medicament for treatment of cancer metastasis. Excluding the subject matter of inventions 1-7, 9.

9. claims: 1-11, 14, 15, 20-36, 40-46, 49, 50 in part

Use of a magnetic nanoparticle of less than 2.5 nm diameter having a core of metal atoms wherein the core is covalently linked to a plurality of ligands wherein the ligand comprises methylene blue for the preparation of a medicament for treatment of cancer metastasis. Excluding the subject matter of inventions 1-8.



European Patent
Office

INCOMPLETE SEARCH
SHEET C

Application Number
EP 04 73 6221

Although claims 37-42 are directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.



European Patent
Office

EUROPEAN SEARCH REPORT under Rule 112 EPC

Application Number
EP 04 73 6221

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
	On request of the applicant the present search report has been drawn up for claims 1-7, 9-42 relating to inventions 2-9.		INV. A61K47/48
X	WO 99/61911 A (HOSTETLER MICHAEL J ; TEMPLETON ALLEN C (US); UNIV NORTH CAROLINA (US)) 2 December 1999 (1999-12-02) * page 6 * * page 8, paragraph 3 - page 9, paragraph 1 * * page 10, paragraph 2; claims 6,8,9,11 *	1-4,7, 10, 12-14, 16-19, 22, 28-30, 34,35	
X	WO 02/32404 A (MARTIN LOMAS MANUEL ; ROJO JAVIER (ES); PENADES SOLEDAD (ES); CONSEJO) 25 April 2002 (2002-04-25) * page 7, paragraph 1-3 * * page 8, paragraph 2 * * page 5, paragraph 2 * * page 28, paragraph 2; claims 1,4-6,12-16,18-23,25-35,39; figure 2 *	1-4,7,9, 12-22, 27-35, 37-42	TECHNICAL FIELDS SEARCHED (IPC) A61K
X	TERANISHI T. ET AL: "Fabrication of gold nanoparticle superlattices and their optical and electronic properties" GOLD, 2003, pages 978-982, XP002306166 * abstract * * page 980; figure 4 *	1-4,7,9, 12-14, 17,18, 22, 29-31,35	
-/-			
3			
Place of search The Hague		Date of completion of the search 2 July 2007	Examiner GONZALEZ RAMON, N
CATEGORY OF CITED DOCUMENTS			
<p>X : particularly relevant if taken alone</p> <p>Y : particularly relevant if combined with another document of the same category</p> <p>A : technological background</p> <p>O : non-written disclosure</p> <p>P : intermediate document</p> <p>T : theory or principle underlying the invention</p> <p>E : earlier patent document, but published on, or after the filing date</p> <p>D : document cited in the application</p> <p>L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			



European Patent
Office

EUROPEAN SEARCH REPORT under Rule 112 EPC

Application Number
EP 04 73 6221

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	SRIKANTH H. ET AL: "Dynamic transverse susceptibility in Au-Fe-Au nanoparticles" MATERIALS SCIENCE AND ENGINEERING, vol. 304-306, 2001, pages 901-904, XP002306167 * page 901, column 2, paragraph 2 *	1-7,9, 12-21, 24-33, 35,37-42	
Y	PARK S.J. ET AL: "Synthesis and magnetic studies of uniform iron nanorods and nanospheres" J. AM. CHEM. SOC., vol. 122, 2000, pages 8581-8582, XP002306168 * page 8581, column 2, paragraph 3 *	1-7,9, 12-21, 24-33, 35,37-42	
A	EP 0 428 412 A (ORTHO DIAGNOSTIC SYSTEMS INC) 22 May 1991 (1991-05-22) * claim 4; example 2 *	1-7,9-42	
P,X	WO 2004/033488 A (REISS BRIAN ; MAO CHUANBIN (US); SOLIS DANIEL (US); UNIV TEXAS (US); B) 22 April 2004 (2004-04-22) * page 40, lines 29,30; claims 47,53,56,59,60,126,130,131; figure 5 * * page 24, lines 2-20 * * page 55 *	1-7,9, 12-22, 24-28	
P,Y	WO 03/086660 A (US GOVERNMENT) 23 October 2003 (2003-10-23) * page 1, paragraph 3; claims 4-7,10-12 * -/-	1-7,9, 12-21, 24-33, 35,37-42	TECHNICAL FIELDS SEARCHED (IPC)
<div style="display: flex; justify-content: space-between;"> <div>Place of search The Hague</div> <div>Date of completion of the search 2 July 2007</div> <div>Examiner GONZALEZ RAMON, N</div> </div>			
<div style="display: flex;"> <div style="flex: 1;"> <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone</p> <p>Y : particularly relevant if combined with another document of the same category</p> <p>A : technological background</p> <p>O : non-written disclosure</p> <p>P : intermediate document</p> </div> <div style="flex: 1;"> <p>T : theory or principle underlying the invention</p> <p>E : earlier patent document, but published on, or after the filing date</p> <p>D : document cited in the application</p> <p>L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p> </div> </div>			



European Patent
Office

EUROPEAN SEARCH REPORT
under Rule 112 EPC

Application Number
EP 04 73 6221

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
P, Y	DI FELICE R. ET AL: "DFT study of Cysteine adsorption on Au(111)" JOURNAL OF PHYSICAL CHEMISTRY B, vol. 107, 2003, pages 1151-1156, XP008038777 * abstract *	31	
P, X	BARRIENTOS A.G. ET AL: "Gold glyconanoparticles:synthetic polyvalent ligands mimicking glycocalyx-like surfaces as tools for glycobiological studies" CHEM. EUR. J., vol. 9, 2003, pages 1909-1921, XP008038760 * figures 1,4 *	1-4, 7-22, 27-33, 35,37-42	
X, P	ROJO J. ET AL: "Gold glyconanoparticles as new tools in antiadhesive therapy" CHEMMBIOCHEM, vol. 5, 2004, pages 291-297, XP008038762 see conclusion* figures 1,3,5 *	1-7,9, 12-22, 24-28	
			TECHNICAL FIELDS SEARCHED (IPC)
Place of search		Date of completion of the search	Examiner
The Hague		2 July 2007	GONZALEZ RAMON, N
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 04 73 6221

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

02-07-2007

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 9961911	A	02-12-1999	AU	6016999 A	13-12-1999
			CA	2329859 A1	02-12-1999
			EP	1073902 A2	07-02-2001
WO 0232404	A	25-04-2002	AT	319436 T	15-03-2006
			AU	9406801 A	29-04-2002
			CA	2424734 A1	25-04-2002
			DE	60117828 T2	16-11-2006
			EP	1326589 A2	16-07-2003
			EP	1671625 A1	21-06-2006
			ES	2262684 T3	01-12-2006
			JP	2004511511 T	15-04-2004
			US	2004052729 A1	18-03-2004
EP 0428412	A	22-05-1991	AU	650632 B2	30-06-1994
			AU	6660690 A	23-05-1991
			AU	7438094 A	15-12-1994
			CA	2029942 A1	17-05-1991
			GR	90100804 A	17-04-1992
			JP	3209166 A	12-09-1991
WO 2004033488	A	22-04-2004	AU	2003298587 A1	04-05-2004
			CA	2499318 A1	22-04-2004
			CN	1753724 A	29-03-2006
			EP	1539342 A2	15-06-2005
			JP	2006520317 T	07-09-2006
			KR	20050043973 A	11-05-2005
WO 03086660	A	23-10-2003	AU	2003209238 A1	27-10-2003
			US	2003190475 A1	09-10-2003